one deducts the sum of the heat contents of all materials brought into the furnace, and in addition takes into account all energy changes, by which the reactions taking place during the course of the process are accompanied.

The main products are steel and slag, which carry away from the furnace on tapping 850 and 525 calories per kilogramme respectively. But in addition, by-products make their appearance namely carbon dioxide from the decomposed limestone (if this material is used as an addition), and carbon monoxide gas from the eliminated carbon content. Tho quantities of heat carried away from these materials aro dependent on the temperature at which the respective reactions proceed.

The limestone will be completely decomposed already by about 1,200°. The carbonic acid sot free possesses at this temperature a heat content of about 1,200 X 0-JM75 = -118 calories per kilogramme, and since the limestone which M employed contains about i)H per cent. CaOOjj, there is contained in the same about 0'-18 kilogramme C0j>. The carbonic acid from 1 kilogramme limestone cairies off therefore

418 X OM3 ^ co 180 calories . . . (50)

The elimination of the carbon from the iron begins at the moment at which the metal is melted down and continues up to the end of the "heat"" ft occurs, therefore, between temperature limits of approximately 1,200— I,(>()()", and thus takes place at a mean temperature of approximately IvlOO" C, Prom this 1 kilogramme CO POHHOHHOH a heat contend of 1,200 X 0-2849 = 842 calories, and since 1 kilogramme (5 gives rise to 2*33 kilogrammes CO, HO the carbon monoxide from 1 kilogramme C removes from tho furnace 2*HH X H12 ;™ about 800 calories. . . t (5.1).

The carbonic acid, issuing from the bath and the carbon monoxide are forthwith brought to high temperature by the llaine gases; the carbon monoxide is burnt thereby and tho heat developed comes to the bath profitably, in tho same way as the heat from the flame of the producer gan. The issuing gases further go through the chambers and leave behind in the same a portion of their available heat, of which later a portion is again made useful. Hince the hint-named portion